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**VIA E-MAIL DELIVERY (PAPER COPIES TO FOLLOW)**

October 14, 2024

Mr. Steve Kahl  
Director of Administration / Executive Secretary  
North Dakota Public Service Commission  
State Capitol Building  
600 East Boulevard  
Bismarck, North Dakota 58505-0480

**Re: *In the Matter of Otter Tail Power Company's and Montana-Dakota Utilities Co.'s Joint Application for a Certificate of Public Convenience and Necessity for a 345 kV Transmission Line from Jamestown, North Dakota to Ellendale, North Dakota;***  
**Comments by the Midcontinent Independent System Operator, Inc.;**  
**Case No. PU-24-091**

Dear Mr. Kahl:

Enclosed regarding the above-captioned case, the Midcontinent Independent System Operator, Inc. ("MISO") provides comments concerning a transmission project that was identified as part of MISO's Long-Range Transmission Planning Tranche 1 portfolio. MISO is the Planning Coordinator for the MISO region, and the portfolio is part of a MISO Transmission Expansion Plan.

MISO respectfully requests that these comments be accepted by the North Dakota Public Service Commission for its consideration of the proposed Jamestown-Ellendale Transmission Project. The comments were prepared by MISO's Director for Cost Allocation and Competitive Transmission within MISO's Transmission Planning Department, and explain how the proposed facilities would provide substantial benefits to North Dakota.

An electronic copy of MISO's comments is being transmitted to you at [skahl@nd.gov](mailto:skahl@nd.gov) as well as to [NDPSC@nd.gov](mailto:NDPSC@nd.gov). Paper copies will be sent to you by mail.

19 PU-24-91 Filed 10/14/2024 Pages: 9  
Comments by the Midcontinent Independent System Operator, Inc. (MISO)  
Midcontinent Independent System Operator, Inc. (MISO)  
Max W. Meyer, MISO - Eagan MN Offices

Sincerely,

*/s/ Max W. Meyer* \_\_\_\_\_

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Attached MISO Comments (paper copies to follow)

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## CERTIFICATE OF SERVICE

A true and correct copy of the Comments by the Midcontinent Independent System Operator, Inc., on this 14<sup>th</sup> day of October, 2024, has been transmitted to the North Dakota Public Service Commission via email (paper copies to follow). The Comments have also been served on the Service List on file with the North Dakota Public Service Commission.

/s/Adriana Rodriguez

Adriana Rodriguez

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**VIA ELECTRONIC DELIVERY**

October 14, 2024

Mr. Steve Kahl  
Director of Administration / Executive Secretary  
North Dakota Public Service Commission  
State Capitol Building  
600 East Boulevard  
Bismarck, North Dakota 58505-0480

**Re: Comments by the Midcontinent Independent System Operator, Inc. in the Matter of Otter Tail Power Company's and Montana-Dakota Utilities Co.'s Joint Application for a Certificate of Public Convenience and Necessity for a 345 kV Transmission Line from Jamestown, North Dakota to Ellendale, North Dakota (Case No. PU-24-091)**

Dear Mr. Kahl:

I provide these comments to the North Dakota Public Service Commission on behalf of the Midcontinent Independent System Operator, Inc. ("MISO") in connection with Otter Tail Power Company's and Montana-Dakota Utilities Co.'s Joint Application for a Certificate of Public Convenience and Necessity for a 345 kV Transmission Line from Jamestown, North Dakota, to Ellendale, North Dakota (Case No. PU-24-091). I am the Director for Cost Allocation and Competitive Transmission within MISO's Transmission Planning Department, responsible for directing the teams focused on transmission planning across the MISO region. My comments address the justification and benefits of the proposed Jamestown – Ellendale 345 kV Transmission Project (the "Project" or "JETx Project"). While the JETx Project is a Multi-Value Project that provides multiple benefits, I have directed my comments on the key reliability and economic benefits of the JETx Project and the Long Range Transmission Planning ("LRTP") Tranche 1 portfolio.

The JETx Project will help ensure that the transmission system in North Dakota is able to continue operating reliably and economically well into the future. The MISO analyses of the existing transmission system during the 2021 MISO Transmission Expansion Plan ("MTEP21") identified numerous transmission facilities that will be loaded above safe operating levels and operate outside of acceptable voltage levels without the JETx Project. Additionally, the JETx Project will help realize the economic benefits of the entire LRTP Tranche 1 portfolio that was approved by MISO as part of MTEP21. As a result, customers in North Dakota and other states

in the MISO Midwest Subregion (Missouri and north extending to Canada and bounded by Michigan and eastern Montana) will not receive the multitude of benefits that are provided by the LRTP Tranche 1 portfolio without the JETx Project.

### **Reliability Benefits**

The 230 kV transmission system in Eastern North Dakota and South Dakota is comprised of a network of 230 kV transmission lines owned by Otter Tail Power Company and Montana-Dakota Utilities Co. between Ellendale – Oakes – Forman – Hankinson – Wahpeton and between Big Stone – Browns Valley – New Effington – Hankinson. This 230 kV system extends into Western/Central Minnesota (Fergus Falls) and is heavily constrained for many different seasons throughout the year as it delivers energy across a large geographical area from generation that is usually transported out of North Dakota and South Dakota and into Minnesota. Transmission planning studies have shown that this existing 230 kV system is at capacity with many reliability concerns, not only for N-1 outages<sup>1</sup> but also for system intact situations. The JETx Project provides additional outlet capability for North Dakota and South Dakota by tying two existing 345 kV systems together (the existing Coyote – Center – Jamestown – Buffalo – Maple River 345 kV line and the Ellendale – Big Stone South 345 kV line). The addition of the JETx Project and the better utilization of these existing 345 kV lines have been shown to unload the existing 230 kV system of concern and improve reliability across the greater area of Eastern North Dakota, South Dakota, and Western/Central Minnesota.

The JETx Project, in conjunction with the Big Stone South – Alexandria – Big Oaks project (another LRTP Tranche 1 project described in the MTEP21 Report Addendum), addresses many thermal and voltage issues for Eastern North Dakota and South Dakota as well as Western/Central Minnesota. MISO studies show that facilities in this area experience heavy loading, and voltage depressions, for a wide geographical area along the North Dakota, South Dakota, and Minnesota borders (the Red River Valley Area). These two LRTP Tranche 1 projects provide significant reinforcements to the transmission system to improve thermal and voltage issues. Most notable, the 230 kV system owned by Montana-Dakota Utilities Co. and Otter Tail Power Company from Ellendale, North Dakota, to Fergus Falls, Minnesota, and from Big Stone, South Dakota to Hankinson, North Dakota is relieved of thermal overloads for numerous N-1 and N-1-1 outages. Without the JETx Project, these reliability issues will still be present on the local area transmission systems in the future and will need to be mitigated by local reliability projects with the costs borne by the local transmission pricing zones.

The JETx Project, along with the Big Stone South – Alexandria – Big Oaks 345 kV project, alleviates excessive thermal loading on 40 existing lines and transformers, as well as mitigating 100 voltage issues resulting from N-1 contingency events. These two projects also relieve thermal

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<sup>1</sup> An “N-1” event includes NERC TPL Category P1, P2, P4, P5 and P7 contingencies and means that the grid experiences the outage of a single transmission line, cable, transformer, or generator. A “N-1-1” event includes NERC TPL Category P3 and P6 contingencies and means that a sequence takes place consisting of an initial loss followed by another loss of a single line, cable, transformer, or generator.

overloads on 80 existing lines and transformers and mitigates 99 voltage issues caused by N-1-1 contingencies.<sup>2</sup>

The highest N-1 thermal overloads located in North Dakota that are addressed by these two LRTP Tranche 1 projects were as follows:

- Wahpeton 230/115 kV Transformer,
- Forman 230/115 kV Transformer, and
- Forman 115kV Substation bus tie.

The highest N-1-1 thermal overloads located in North Dakota that are addressed by these two LRTP Tranche 1 projects were as follows:

- Forman 230/115 kV transformer,
- Forman 115 kV bus tie,
- Mandan – Napoleon 230 kV line,
- Wahpeton 230/115 kV transformer,
- East Bismarck – Linton 115 kV line,
- Ellendale 230/115 kV transformer, and
- Hankinson – Wahpeton 230 kV line.

MISO examined five alternative sets of transmission projects to the approved JETx Project and the Big Stone South – Alexandria – Big Oaks 345 kV project to understand if any alternative set of transmission projects performed more effectively. The conclusion from this evaluation was that the JETx Project, in combination with the Big Stone South – Alexandria – Big Oaks 345 kV project, provides the best performance at the lowest cost to resolve the reliability issues in the area. The evaluation of these alternatives are discussed in more detail in the MTEP21 Report Addendum.<sup>3</sup>

### **Economic Benefits**

The LRTP Tranche 1 portfolio will enable a more reliable and efficient delivery of energy from low cost, regionally sited generators than the existing transmission system. For example, the LRTP Tranche 1 portfolio results in an increase of transmission capacity that alleviates congestion for a more efficient dispatch of the energy market. In addition, the LRTP Tranche 1 portfolio provides for a more cost-effective regional build-out of generation resources that will not only better utilize the existing generation resources, but also allow for the continued interconnection of new generation resources in areas that offer higher capacity factors for intermittent resources, such as wind generation in North Dakota. MISO's analysis also included additional economic value from the LRTP Tranche 1 portfolio due to the ability to: (1) avoid future transmission investment

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<sup>2</sup> The different values for the number of thermal and voltage violations in these comments from the description contained in the MTEP21 Report Addendum results from further review and validation after the MTEP21 Report Addendum was posted.

<sup>3</sup> See MTEP21 Report Addendum, pg. 25.

that would have been needed without the LRTP Tranche 1 portfolio, (2) reduce resource adequacy requirements that defers capital investment in new generation resources, and (3) avoid load shedding that may arise due to severe winter weather events.

When the economic benefits of the LRTP Tranche 1 portfolio are compared to the present value of the revenue requirements, the portfolio produces total benefits between 2.6 to 3.8 times greater than the costs across the MISO Midwest Subregion on a present value basis over 20 years.<sup>4</sup> On a more granular level, the benefit to cost ratio for Zone 1<sup>5</sup> was between 2.8 to 4.0 times greater than the present value of the LRTP Tranche 1 portfolio costs.<sup>6</sup>

### **Consequences of Delay or Cancellation**

The objective of the extensive planning functions of MISO is to derive the most cost-effective transmission expansion plan that will meet local and regional needs for reliability, optimize access to economic generation resources, and deliver other important economic values that benefit customers. The LRTP Tranche 1 portfolio was designed with these considerations in mind. The inability to construct just one project within the entire LRTP Tranche 1 portfolio, which was approved by the MISO Board of Directors for its reliability, economic, and other benefits, could result in a reduction of the effectiveness of the portfolio or worse yet, could lead to the development of less optimal solutions that would be needed to address reliability and economic concerns.

Not constructing the JETx Project will jeopardize the ability of the transmission system in North Dakota and the MISO Midwest Subregion to continue operating reliably and economically into the future. As described within these comments, the MISO analyses have shown that the JETx Project will alleviate excessive thermal loading on numerous existing lines and transformers, as well as mitigate several voltage issues resulting from N-1 and N-1-1 contingency events. In addition, customers in North Dakota and the other states in the MISO Midwest Subregion will not receive the multitude of benefits, provided by the LRTP Tranche 1 portfolio without the JETx Project. To the extent that the timeline for the in-service date of the JETx Project is delayed past

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<sup>4</sup> *Id.*, Executive Summary, pg. 4.

<sup>5</sup> Zone 1 is comprised of MISO member companies within Minnesota, eastern Montana, North Dakota, South Dakota, and western Wisconsin.

<sup>6</sup> *Id.* The LRTP Tranche 1: Detailed Business Case Analysis located at: <https://www.misoenergy.org/planning/long-range-transmission-planning/> (> under “Tranche 1 – Approved July 2022” and > “LRTP Tranche 1: Detailed Business Case Analysis”), its “Waterfall” tab, provides the reader with the ability to identify the contribution of each benefit metric to the overall benefits of the Tranche 1 portfolio. For example, excluding the decarbonization benefit metric for Zone 1 results in a benefit to cost ratio of between 2.6 and 3.0 and doing the same for the MISO Midwest Subregion results in total benefits of between 2.4 and 2.9 times the Tranche 1 portfolio costs. As another example, excluding decarbonization as well as the congestion and fuel savings benefit metrics for Zone 1 results in a benefit to cost ratio between 1.4 and 1.9.

2028, the realization of these benefits that are provided by the LRTP Tranche 1 portfolio could be delayed or diminished.

### **Conclusion**

The JETx Project proposed by Otter Tail Power Company and Montana-Dakota Utilities Co. will provide substantial benefits to North Dakota and is necessary to alleviate excessive thermal loadings, mitigate voltage issues, minimize the risk of load shedding due to severe winter weather events, reduce congestion for a more efficient dispatch of generation, and avoid future transmission investment. This Project is a critical component of the larger MISO regional transmission plan for the continued development of a reliable and economic regional transmission system. This development will allow the LRTP Tranche 1 portfolio to deliver sizable net benefits across the MISO Midwest Subregion.

Sincerely,

*/s/ Jeremiah Doner* \_\_\_\_\_

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A true and correct copy of the Comments by the Midcontinent Independent System Operator, Inc., on this 14<sup>th</sup> day of October, 2024, has been transmitted to the North Dakota Public Service Commission via email (paper copies to follow). The Comments have also been served on the Service List on file with the North Dakota Public Service Commission.

/s/Adriana Rodriguez

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